Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application. Applicant has submitted a new complete claim set showing marked up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Listing of Claims:

1. (Currently Amended) A method comprising:

computing a first probe estimate from a first probe sequence transmitted over a network from a first device to a second device;

computing a second probe estimate from a second probe sequence transmitted over the network from the first device to the second device, the first probe sequence providing a different load to the network than the second probe sequence; ~~and~~

estimating a sustainable capacity of the network based on the first probe estimate and the second probe estimate; and

wherein the estimating operation comprises computing an algorithm substantially of the form:

$$SusCap_{est} = \delta m \frac{\hat{D}_2 - D_{\min}}{\hat{D}_2 - \hat{D}_1}$$

wherein $SusCap_{est}$ represents the sustainable capacity value, δm represents a load difference between the second probe sequence and the first probe sequence, $\hat{D}_2$ represents the second probe estimate, $\hat{D}_1$ represents the first probe estimate, and D_{min} represents a minimum delay time of individual round-trip delay times associated with the first load probe sequence and the second load probe sequence.

2. (original) The method of claim 1 wherein the sustainable capacity is further based on a minimum delay time of individual round-trip delay times associated with the first probe sequence and the second probe sequence.

3. (original)The method of claim 1 wherein the sustainable capacity of the network relates to data traffic flowing from the first device to the second device, and further comprising:

computing a third probe estimate from a third probe sequence transmitted over the network from the second device to the first device;

computing a fourth probe estimate from a fourth probe sequence transmitted over the network from the second device to the first device, the third probe sequence providing a different load to the network than the fourth probe sequence; and

estimating a reverse sustainable capacity of the network for data traffic from the second device and the first device based on the third probe estimate and the fourth probe estimate.

4. (original)The method of claim 1 wherein the first probe sequence includes probe packets periodically transmitted from the first device to the second device.

5. Cancelled

6. Cancelled

7. (original)The method of claim 1 wherein neither the first probe sequence nor the second probe sequence saturate the network.

8. (original)The method of claim 1 wherein the second probe sequence loads the network more than the first probe sequence.

9. (original)The method of claim 1 further comprising:

generating a first probe sequence, wherein each probe packet in the first probe sequence has a unique signature.

10. (original)The method of claim 1 further comprising:

timestamping each packet in the first probe sequence prior to transmission to the second network device.

11. (original)The method of claim 1 further comprising:

timestamping each response to each probe packet in the first probe sequence after to reception of the probe packet from the second network device.

12. (original)The method of claim 1 wherein each probe estimate is an average round-trip delay time.

13. (original)The method of claim 1 wherein each probe estimate is a median round-trip delay time.

14. (original)The method of claim 1 wherein each probe estimate is a range of round-trip delay times.

15. (original)The method of claim 1 wherein each probe estimate is a standard deviation of round-trip delay times.

16. (Currently Amended)A computer program product disposed on a computer readable storage media encoding a computer program for executing on a computer system a computer process, the computer process comprising:

computing a first probe estimate from a first probe sequence transmitted over a network from a first device to a second device;

computing a second probe estimate from a second probe sequence transmitted over the network from the first device to the second device, the first probe sequence providing a different load to the network than the second probe sequence; ~~and~~

estimating a sustainable capacity of the network based on the first probe estimate and the second probe estimate; and

wherein the estimating operation comprises computing an algorithm substantially of the form:

$$SusCap_{est} = \delta m \frac{\hat{D}_2 - D_{\min}}{\hat{D}_2 - \hat{D}_1}$$

wherein $SusCap_{est}$ represents the sustainable capacity value, δm represents a load difference between the second probe sequence and the first probe sequence, $\hat{D}_2$ represents the second probe estimate, $\hat{D}_1$ represents the first probe estimate, and $D_{\min}$ represents a minimum delay time of individual round-trip delay times associated with the first load probe sequence and the second load probe sequence..

17. (original)The computer program product of claim 16 wherein the sustainable capacity value is further based on a minimum delay time of individual round-trip delay times associated with the first probe sequence and the second probe sequence.

18. (original)The computer program product of claim 16 wherein the sustainable capacity of the network relates to data traffic flowing from the first device to the second device, and further comprising:

computing a third probe estimate from a third probe sequence transmitted over the network from the second device to the first device;

computing a fourth probe estimate from a fourth probe sequence transmitted over the network from the second device to the first device, the third probe sequence providing a different load to the network than the fourth probe sequence; and

estimating a reverse sustainable capacity value in the network characterizing sustainable capacity of the network for data traffic from the second device and the first device based on the third probe estimate and the fourth probe estimate.

19. (original)The computer program product of claim 16 wherein the first probe sequence includes probe packets periodically transmitted from the first device to the second device.

20. Cancelled

21. Cancelled The computer program product of claim 16 wherein the estimating operation comprises computing an algorithm substantially of the form:

$$SusCap_{est} = \delta m \frac{\hat{D}_2}{\hat{D}_2 - \hat{D}_1}$$

wherein $SusCap_{est}$ represents the sustainable capacity value, δm represents a load difference between the second probe sequence and the first probe sequence, $\hat{D}_2$ represents the second probe estimate, and $\hat{D}_1$ represents the first probe estimate.

22. (original)The computer program product of claim 16 wherein neither the first probe sequence nor the second probe sequence saturate the network.

23. (original)The computer program product of claim 16 wherein the second probe sequence loads the network more than the first probe sequence.

24. (original)The computer program product of claim 16 wherein the computer process further comprises:

generating a first probe sequence, wherein each probe packet in the first probe sequence has a unique signature.

25. (original)The computer program product of claim 16 wherein the computer process further comprises:

timestamping each packet in the first probe sequence prior to transmission to the second network device.

26. (original)The computer program product of claim 16 wherein the computer process further comprises:

timestamping each response to each probe packet in the first probe sequence after to reception of the probe packet from the second network device.

27. (original)The computer program product of claim 16 wherein each probe estimate is an average round-trip delay time.

28. (original)The computer program product of claim 16 wherein each probe estimate is a median round-trip delay time.

29. (original)The computer program product of claim 16 wherein each probe estimate is a range of round-trip delay times.

30. (original)The computer program product of claim 16 wherein each probe estimate is a standard deviation of round-trip delay times.

31. (Currently Amended)A system comprising:

a probe sequence generator that generates a first probe sequence and a second probe sequence;

a communication module that transmits the first probe sequence and the second probe sequence to a target, receives a first response sequence associated with the first probe sequence and a second response sequence associated with the second probe sequence; and computes a first probe estimate from the first probe sequence and a second probe estimate from the second probe sequence; and

a probe performance analyzer that estimates a sustainable capacity in the network characterizing sustainable capacity of the network for data traffic from the first device and the second device based on the first probe estimate and the second probe estimate; and

wherein the probe performance analyzer computes an algorithm substantially of the form:

$$SusCap_{est} = \delta m \frac{\hat{D}_2 - D_{\min}}{\hat{D}_2 - \hat{D}_1}$$

wherein $SusCap_{est}$ represents the sustainable capacity value, δm represents a load difference between the second probe sequence and the first probe sequence, $\hat{D}_2$ represents the second probe estimate, $\hat{D}_1$ represents the first probe estimate, and $D_{\min}$ represents a minimum delay time of individual round-trip delay times associated with the first load probe sequence and the second load probe sequence.

32. (original)The system of claim 31 wherein the sustainable capacity is further based on a minimum delay time of individual round-trip delay times associated with the first probe sequence and the second probe sequence.

33. (original)The system of claim 31 wherein the first probe sequence includes probe packets periodically transmitted from the first device to the second device.

34. Cancelled

35. Cancelled

36. (original)The system of claim 31 wherein neither the first probe sequence nor the second probe sequence saturate the network.

37. (original)The system of claim 31 wherein each probe estimate is an average round-trip delay time.

38. (original)The system of claim 31 wherein each probe estimate is a median round-trip delay time.

39. (original)The system of claim 31 wherein each probe estimate is a range of round-trip delay times.

40. (original)The system of claim 31 wherein each probe estimate is a standard deviation of round-trip delay times.

41. -64 Cancelled

65. (new) A method comprising:

computing a first probe estimate from a first probe sequence transmitted over a network from a first device to a second device;

computing a second probe estimate from a second probe sequence transmitted over the network from the first device to the second device, the first probe sequence providing a different load to the network than the second probe sequence;

estimating a sustainable capacity of the network based on the first probe estimate and the second probe estimate; and

wherein the estimating operation comprises computing an algorithm substantially of the form:

$$SusCap_{est} = \delta m \frac{\hat{D}_2}{\hat{D}_2 - \hat{D}_1}$$

wherein $SusCap_{est}$ represents the sustainable capacity value, δm represents a load difference between the second probe sequence and the first probe sequence, $\hat{D}_2$ represents the second probe estimate, and $\hat{D}_1$ represents the first probe estimate.

66. (new) The method of claim 65 wherein the sustainable capacity is further based on a minimum delay time of individual round-trip delay times associated with the first probe sequence and the second probe sequence.

67. (new)The method of claim 65 wherein the sustainable capacity of the network relates to data traffic flowing from the first device to the second device, and further comprising:

computing a third probe estimate from a third probe sequence transmitted over the network from the second device to the first device;

computing a fourth probe estimate from a fourth probe sequence transmitted over the network from the second device to the first device, the third probe sequence providing a different load to the network than the fourth probe sequence; and

estimating a reverse sustainable capacity of the network for data traffic from the second device and the first device based on the third probe estimate and the fourth probe estimate.

68. (new)A computer program product disposed on a computer readable storage media encoding a computer program for executing on a computer system a computer process, the computer process comprising:

computing a first probe estimate from a first probe sequence transmitted over a network from a first device to a second device;

computing a second probe estimate from a second probe sequence transmitted over the network from the first device to the second device, the first probe sequence providing a different load to the network than the second probe sequence; estimating a sustainable capacity of the network based on the first probe estimate and the second probe estimate; and

wherein the estimating operation comprises computing an algorithm substantially of the form:

$$SusCap_{est} = \delta m \frac{\hat{D}_2}{\hat{D}_2 - \hat{D}_1}$$

wherein $SusCap_{est}$ represents the sustainable capacity value, δm represents a load difference between the second probe sequence and the first probe sequence, $\hat{D}_2$ represents the second probe estimate, and $\hat{D}_1$ represents the first probe estimate.

69. (new)The computer program product of claim 68 wherein the sustainable capacity value is further based on a minimum delay time of individual round-trip delay times associated with the first probe sequence and the second probe sequence.

70. (new)The computer program product of claim 68 wherein the sustainable capacity of the network relates to data traffic flowing from the first device to the second device, and further comprising:

computing a third probe estimate from a third probe sequence transmitted over the network from the second device to the first device;

computing a fourth probe estimate from a fourth probe sequence transmitted over the network from the second device to the first device, the third probe sequence providing a different load to the network than the fourth probe sequence; and

estimating a reverse sustainable capacity value in the network characterizing sustainable capacity of the network for data traffic from the second

device and the first device based on the third probe estimate and the fourth probe estimate.

71. (new)The computer program product of claim 68 wherein the first probe sequence includes probe packets periodically transmitted from the first device to the second device.

72. (new)The computer program product of claim 68 wherein neither the first probe sequence nor the second probe sequence saturate the network.

73. (new)The computer program product of claim 68 wherein the second probe sequence loads the network more than the first probe sequence.

74. (new)The computer program product of claim 68 wherein the computer process further comprises:

generating a first probe sequence, wherein each probe packet in the first probe sequence has a unique signature.

75. (new)The computer program product of claim 68 wherein the computer process further comprises:

timestamping each packet in the first probe sequence prior to transmission to the second network device.

76. (new)The computer program product of claim 68 wherein the computer process further comprises:

timestamping each response to each probe packet in the first probe sequence after to reception of the probe packet from the second network device.

77. (new)The computer program product of claim 68 wherein each probe estimate is an average round-trip delay time.

78. (new)The computer program product of claim 68 wherein each probe estimate is a median round-trip delay time.

79. (new)The computer program product of claim 68 wherein each probe estimate is a range of round-trip delay times.

80. (new)The computer program product of claim 68 wherein each probe estimate is a standard deviation of round-trip delay times.

81. (new)A system comprising:

a probe sequence generator that generates a first probe sequence and a second probe sequence;

a communication module that transmits the first probe sequence and the second probe sequence to a target, receives a first response sequence associated with the first probe sequence and a second response sequence associated with the second probe sequence; and computes a first probe estimate from the first probe sequence and a second probe estimate from the second probe sequence; and

a probe performance analyzer that estimates a sustainable capacity in the network characterizing sustainable capacity of the network for data traffic from the first device and the second device based on the first probe estimate and the second probe estimate; and

wherein the probe performance analyzer computes an algorithm substantially of the form:

$$SusCap_{est} = \delta m \frac{\hat{D}_2}{\hat{D}_2 - \hat{D}_1}$$

wherein $SusCap_{est}$ represents the sustainable capacity value, δm represents a load difference between the second probe sequence and the first probe sequence, $\hat{D}_2$ represents the second probe estimate, and $\hat{D}_1$ represents the first probe estimate.

82. (new) The system of claim 81 wherein the sustainable capacity is further based on a minimum delay time of individual round-trip delay times associated with the first probe sequence and the second probe sequence.

83. (new) The system of claim 81 wherein the first probe sequence includes probe packets periodically transmitted from the first device to the second device.

84. (new) The system of claim 81 wherein neither the first probe sequence nor the second probe sequence saturate the network.

85. (new) The system of claim 81 wherein each probe estimate is an average round-trip delay time.

86. (new) The system of claim 81 wherein each probe estimate is a median round-trip delay time.

87. (new) The system of claim 81 wherein each probe estimate is a range of round-trip delay times.

88. (new) The system of claim 81 wherein each probe estimate is a standard deviation of round-trip delay times.